

AUGUSTA: Interstate 95 Exit 113 Modification Kennebec County, Maine



**Submitted Pursuant to 42 U.S.C. 4332 (2),
23 U.S.C. 138 and 23 CFR 771**



Federal Highway Administration

Maine Department of Transportation



December 2010

FHWA-MAINE DOT

Environmental Document


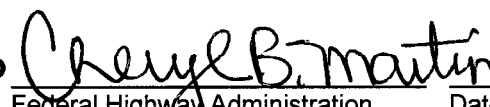
GENERAL PROJECT INFORMATION

Municipality/County/Route No.	Augusta, Kennebec County, Interstate 95 Exits 112 and 113
Project Identification Number	017592.00 / STP-1759(200)X
<u>Project Description/Termini</u>	Modification of the Exit 113 Interchange and rehabilitation of Old Belgrade Road from Exit 113 west to Route 8/27.

DOCUMENT TYPE

Environmental Assessment (EA)	<input checked="" type="checkbox"/>
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APPROVAL

 Maine Department of Transportation Commissioner or designee	<u>Dec. 7, 2010</u> Date	 Federal Highway Administration Division Administrator or designee	<u>12/13/10</u> Date
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Augusta, Interstate 95, Exit 113 Modification

The following people may be contacted for additional information

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A Public Hearing will be held on January 12, 2011 from 6:00 to 8:00 pm at Augusta City Center.

Comments on this Environmental Assessment are due by **January 31, 2011** and should be sent to either of the addresses above.

PURPOSE AND NEED

Existing Conditions:

Augusta, is a workplace, home, and service center for thousands of people, as well as, the Capitol of Maine . It is also a destination point for tourists and school children drawn to the cultural heritage of the city and the state of Maine.

Bisecting the city of Augusta Interstate 95 (I-95) is the north-south lifeline for intrastate and interstate travel for the state of Maine. The I-95 Exits 112 and 113 provide access to the residential, commercial, recreation and government entities located in Augusta. Exit 112 provides full directional access to the primary retail area of Augusta whereas; Exit 113 provides one directional access, to the east a more residential area of Augusta, as well as, coastal and Downeast Maine, important tourism and economic regions of the state. (See page 3, Location Map).

The area encompassing I-95 Exits 112 and 113 has experienced substantial growth in recent years and will continue to grow as the City of Augusta has established the area from the Augusta Civic Center, along Route 8/11/27 (Civic Center Drive) to Old Belgrade Road as an Economic Growth Zone. New growth to occur in this area includes the MaineGeneral Medical Center (MaineGeneral) that has announced its intention to locate a new inpatient regional hospital with the main entrance onto Old Belgrade Road.

MaineDOT and the City of Augusta have approved Traffic Movement Permit Applications for approximately 705,000 square feet of development in the Study Area, including future expansions of the Commerce Center and the Marketplace retail center. The City has also identified the potential of another 1.78 million square feet of complementary retail, service, office, storage, and warehousing development within the Economic Growth Zone.¹ (See *Secondary Impacts* section, Approved and Potential Development, City of Augusta, 2009). The granting of future traffic movement permits depends largely on upgrading the area transportation network to accommodate existing and future development needs.

By 2028, Civic Center Drive, in the vicinity of the I-95 Exit 112 ramps, is forecasted to exceed capacity by 35% to 200% resulting in network gridlock. Because of this gridlock it can be expected that mainline I-95 through traffic would be disrupted by vehicles backed onto the Exit 112 northbound and southbound off-ramps.^{2 3}

History

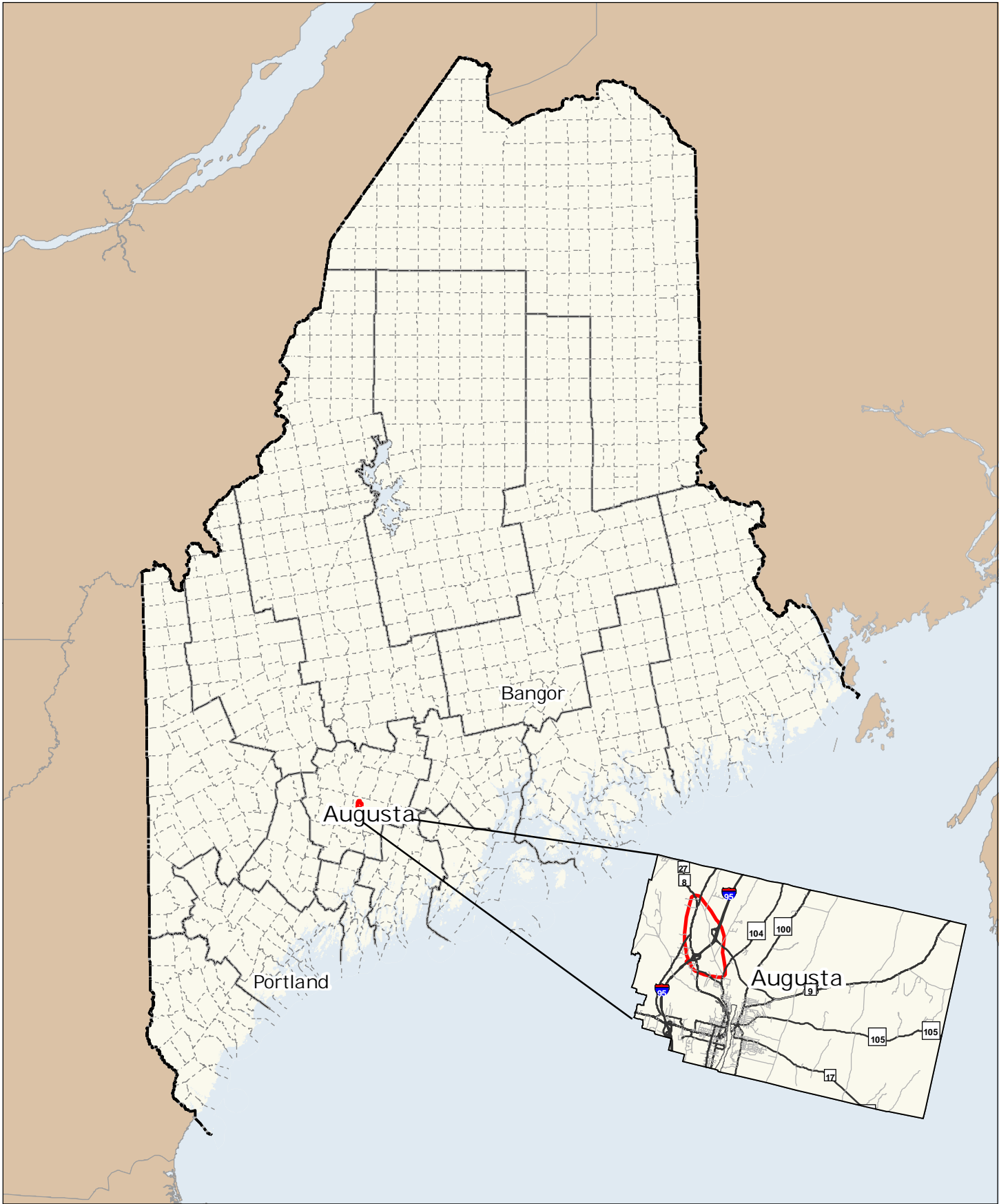
The *Draft Access Justification Report Exit 113 – Interstate 95 Augusta, Maine* (DAJR) documents the feasibility study level effort and process utilized to identify a reasonable range of alternatives to address the congestion and safety problems at Exit 112. The DAJR identified the modification of Exit 113 as the preferred strategy for providing traffic relief at Exit 112 and Civic Center Drive. The DAJR also provides the rationalization for dismissing alternatives from further consideration; summarizes the preliminary impact analysis for the proposed modification of the existing Exit 113 interchange. One of the motivating reasons for this analysis and the need to advance the proposed modifications to Exit 113 are the transportation congestion and safety issues currently being experienced at Exit 112.

Therefore, the initial Study Area for the *Draft Access Justification Report* and the Study Area for this





1 Avore, Scott. "Augusta-Exit 113 / Old Belgrade Road Preliminary R/W Cost Estimates." Letter to Ernie Martin. 21 July 2010. MS. Maine Department of Transportation, Augusta, Maine. P:\Augusta_Exit_113_Environmental_Study_Development.

2 Gorrill-Palmer Consulting Engineers, Inc., *Draft - Access Justification Report Exit 113 – Interstate 95 Augusta, Maine* (Maine, July 2010), p. 84.

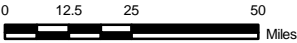
3 Maine Department of Transportation. Bureau of Transportation Systems Planning. 17592.00 Augusta – Exit 113 Triangle Area Traffic Analysis. By Dennis Emidy. Augusta, Maine, 2010. Print.



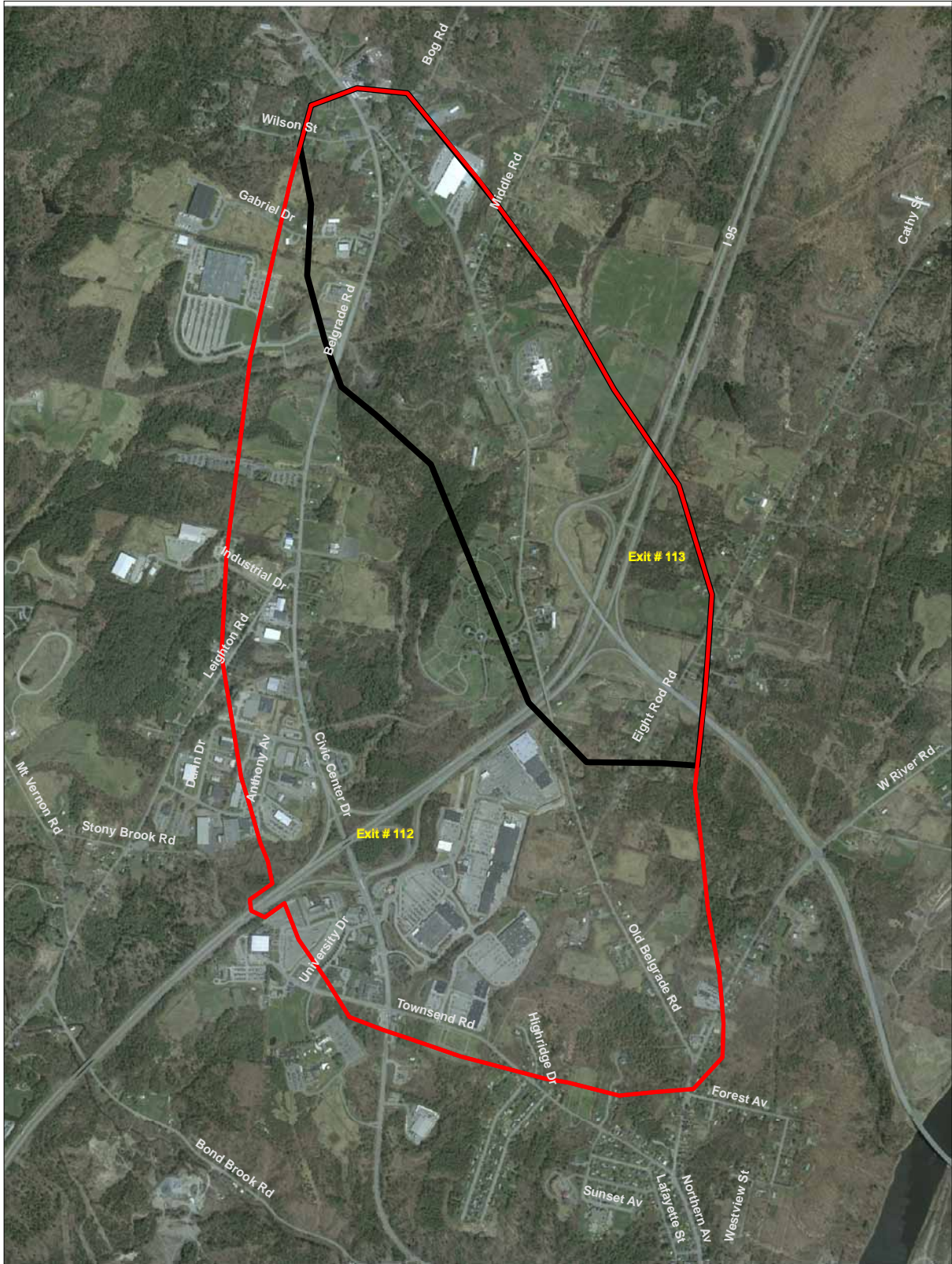
Legend

-  Augusta Study Area
-  County
-  State
-  Town



Augusta Connections Location Map



Augusta Exit 113



Initial and Modified Study Areas

-  Augusta Exit 113 Modified Study Area
-  Augusta Study Area



Checklist Environmental Assessment (EA) are based on the existing Exit 112 area currently operating at capacity and the existing Exit 113 area that offers the opportunity to provide traffic relief at Exit 112.

Study Area

The DAJR Study Area is generally bounded by Townsend Road, Old Belgrade Road, and Civic Center Drive / Belgrade Road in Augusta, Kennebec County, Maine. This Study Area includes I-95 and the interchanges and adjacent intersections at Civic Center Drive (Exit 112) and the State Route 3 Connector at Exit 113 (Exit 113).

As the Exit 112 alternatives are dismissed from further consideration the EA Study Area was reconfigured to encompass the Exit 113 area as depicted in black on Figure 2, Initial and Modified Study Areas. The Study Area for the Checklist EA encompasses Exit 113, Old Belgrade Road, west to State Route 27 (Route 27) a modification of the DAJR Study. The modified Study Area focuses the direct impact analysis on the location of the range of alternatives and intersection options to be analyzed in this EA, whereas, indirect and cumulative impacts are analyzed within the broader *DAJR* Study Area.

Purpose of and Need for Improvement:

The Purpose of the Proposed Action is to:

- ◇ Relieve congestion at Exit 112
- ◇ Reduce vehicle conflict points and High Crash Locations (HCLs) within the Study Area
- ◇ Provide an adequate transportation network within the Study Area that also accommodates regional mobility
- ◇ Compliment existing and proposed development opportunities in the Study Area

The Need for the Proposed Action is:

- ◇ Traffic congestion at I-95 and Route 27 (Civic Center Drive), Exit 112
- ◇ Vehicular conflict points creating HCLs in the Exit 112 vicinity
- ◇ Access to compliment designated growth areas of Augusta
- ◇ Economic development pressures on the existing transportation infrastructure that has lead to increased traffic congestion.

U.S. Army Corps of Engineers, New England Highway Methodology

On March 26, 2010, in accordance with the New England Highway Methodology, the U.S. Army Corps of Engineers (Corps) defined the Basic Project Purpose of the project as: “modify Exit 113 on Interstate 95 at Augusta, Maine to improve public safety, and the movement of goods and services by east-west traffic to/from State Routes 8, 11, and 27 (west of I-95) and State Route 3 (east of I-95)”. (Appendix A-1).

On June 8, 2010, based on early resource avoidance efforts by MaineDOT, the Corps made a preliminary determination that the New England Highway Methodology process “is not applicable to this project. Our determination of the Basic Project Purpose is still applicable and should be used in your analysis of alternatives in accordance with the Section 404(b)(1) Guidelines”. (Appendix A-2)

Scope of this Environmental Assessment

This EA documents the detailed alternatives and potential impact analysis of the social, economic, transportation, and natural environment of the Agency’s Proposed Action. These impacts have been minimized as feasible and practicable. Mitigation of unavoidable impacts is proposed as appropriate.

To identify alternatives that would undertake a comprehensive traffic operational study of the I-95 Exit 112/113 area in Augusta the Initial Study Area was defined as the area generally bounded by Townsend Road, Old Belgrade Road, and Civic Center Drive/Belgrade Road.

Two alternatives were considered for Exit 112 both requiring widening Civic Center Drive to six-lanes thereby substantially impacting Augusta's prime commercial/retail area with considerable impacts to the city's tax base and difficult traffic control requirements during construction as Civic Center Drive is the primary, if only, entrance to most of the adjacent properties.

A full movement interchange at Exit 113 onto Old Belgrade Road could not be constructed without upgrading the immediate roadway network around the proposed interchange to accommodate the increase in traffic volume that such an interchange would generate. The two alternatives include: (1) upgrade of Old Belgrade Road and (2) a new highway connector. Both alternatives would be two lanes wide and built to arterial standards.

Existing Roadway Conditions¹

Interstate 95 (I-95)

I-95, the interstate highway through the study area, is a north-south controlled access facility that runs in a general east/west direction through Augusta. I-95 consists of two lanes of travel in each direction within approximately 300 feet of right-of-way. The posted speed limit is 65 miles per hour (mph).

I-95 Exit 113

I-95, the interstate highway through the study area, is a north-south controlled access facility that runs in a general east/west direction. Exit 113, the Route 3 Connector Interchange, is a trumpet configuration providing a connection between I-95 and State Route 3 to the east. The existing Exit 113 interchange does not provide access to the northwest of I-95. The Exit 113 interchange was primarily constructed to relieve congestion and remove heavy truck traffic from Exit 109 along Western Avenue and on the Memorial Bridge in Augusta. This is accomplished by allowing access to/from I-95 to the northeast area of Augusta and points east of the Kennebec River. Exit 113 was not designed to relieve Exit 112 congestion because it does not allow access directly to the immediate area west of I-95, forcing all such existing and future traffic through the already overburdened Exit 112 area. The Exit 113 interchange provides adequate acceleration and deceleration distances to merge or diverge from I-95 without introducing unsafe weaving movements.

I-95 Exit 112

The Civic Center Drive Interchange with I-95 is a diamond with loop interchange configuration. Exit 112 provides full four-way access to the City center to the south and points north on Route 27.

State Route 3 Connector

The State Route 3 Connector is an undivided National Highway System (NHS) principal arterial limited access highway linking I-95, Exit 113 and State Route 3 north of Augusta city center. The width of the highway is four-lanes west of Route 100/201(Riverside Drive) and two lanes between that point and Route 3/9/202 (North Belfast Avenue). The Route 3 access points are a partial interchange with I-95 at Exit 113 and Routes 104, 100/201, and 3/9/202.

¹ Gorrill-Palmer, *Draft Access Justification Report*, p. 21 - 31.

State Route 8/11/27

State Route 8/11/27 is a minor arterial running southeast to northwest. Route 8/11/27 is also known as Civic Center Drive from Townsend Road to Leighton Road and Belgrade Road from Leighton Road to the intersection with Old Belgrade Road. In the Study Area its cross-section is generally a two-lane roadway with auxiliary lanes at major intersections within approximately 100 feet of right-of-way. The posted speed limit varies from 35 mph to 50 mph. Land uses along Route 8/11/27 are primarily commercial and industrial including Augusta Marketplace, Augusta Civic Center, the University of Maine at Augusta, Irving Oil, and the Commerce Center with a scattering of residential uses most of which are for sale as commercial properties.

Old Belgrade Road

Old Belgrade Road is a local two-lane roadway that parallels Route 8/11/27, it connects State Route 104 (West River Road) with State Routes 8/11/27. In the Study Area its cross-section is generally a two-lane roadway within approximately 66 feet of right-of-way. The posted speed limit is 45 mph. Land uses along Old Belgrade Road are mixed use including the Harold Alfond Center for Cancer Care, Maine Veterans Memorial Cemetery, NRF Distributors, and residences. The MaineDOT Traffic Movement Permit for Phase 3B of the Augusta Marketplace requires the installation of a fully actuated traffic signal at the Old Belgrade Road and State Route 104 intersection, and the construction of an entrance from the Augusta Marketplace onto Old Belgrade Road. The city of Augusta has identified the Old Belgrade Road area west of Exit 113 as a future "Economic Growth Area" this designation follows the commercial development trends that started thirty years ago.⁵

Alternatives

Logical Termini for the Proposed Action

The logical terminus for the modification of the Exit 113 Interchange and rehabilitation of Old Belgrade Road from Exit 113 west to Study Area is based upon the following factors:

- ◇ Current and future safety and operation issues of the transportation network serving the local service area;
- ◇ Regional traffic flow that serves a variety of businesses and communities within the area; and
- ◇ Current and future land use development within the study area that influences traffic

To identify alternatives that would undertake a comprehensive traffic operational study of the I-95 Exit 112/113 area in Augusta the Initial Study Area was defined as the area generally bounded by Townsend Road, Old Belgrade Road, and Civic Center Drive/Belgrade Road. Two alternatives were considered for Exit 112 both requiring widening Civic Center Drive to six-lanes thereby substantially impacting Augusta's prime commercial/retail area with far-reaching impacts to the city's tax base and challenging construction traffic control requirements as Civic Center Drive is the primary, if only, entrance to most of the adjacent properties.

Alternatives considered and dismissed from further consideration are discussed in depth in the *Draft Access Interstate Report* and summarized in this environmental document at *Other Alternatives Considered but Dismissed From Further Consideration*.

⁵ Nazar, Matthew, City of Augusta, Maine. "Land use, Zoning and Community Characteristics ." Message to Judy Lindsey, Maine Department of Transportation. December 15, 2009. E-mail.

Alternatives:

No-Action Alternative

The No-Action Alternative presumes the existing highway system remains unchanged except for the implementation of regular maintenance activities and projects that the City of Augusta has collected or is scheduled to collect traffic impact fees as mitigation for development projects within the study area. Fees have been collected from several developers that have been designated for the same projects. These include a signal at the intersection of Civic Center Drive and Darin Drive and corridor improvements along Civic Center Drive.⁶ Otherwise, physical changes that create new system capacity would not occur although, regular maintenance activities would continue.

The No-Action Alternative would also cause vehicles to be denied entry to the transportation network as capacity decreases. Therefore, intensified congestion to the point of gridlock would occur along Civic Center Drive and the transportation network utilizing Exit 112. Without substantial modifications to Exit 112 and Civic Center Drive the local transportation network would not have the capacity to maintain local or regional mobility or allow safe access / egress to adjacent land uses.

Exit 113 - MaineDOT's Preferred Alternative

The Preferred Alternative consists of three roadway segments including the modification of Exit 113 from a directional interchange to a full interchange at a cost of approximately \$11 million. A full interchange at Exit 113 will maintain the existing free flow movement from northbound and southbound I-95 east to Route 3 and add a free flow movement from northbound and southbound I-95 west to Route 8/27.

MaineDOT's Preferred Alternative consists of:

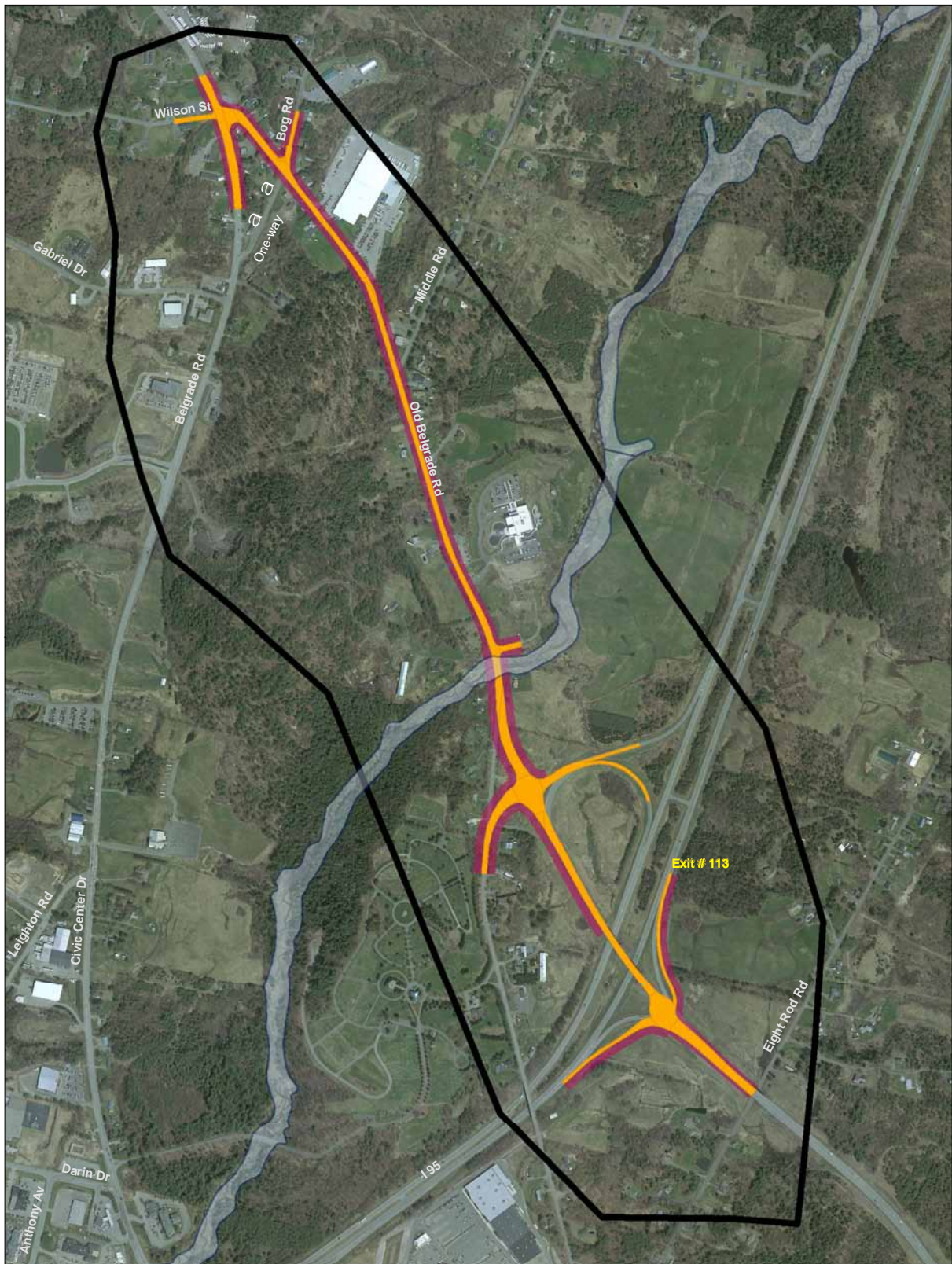
- ◇ I-95 Exit 113 Interchange Alternative 2,
- ◇ Old Belgrade Road improvements and
- ◇ Reconfiguration of the Route 27/ Old Belgrade Road/Bog Road intersection.

I-95 Exit 113 Interchange Alternative 2

The first segment of the MaineDOT's Preferred Alternative, is identified as I-95 Exit 113 Interchange Alternative 2, which consists of modifying the existing Exit 113 interchange to provide northbound and southbound Interstate traffic access to the west of I-95. The modification of the Exit 113 interchange replaces the current trumpet ramp design with roundabouts, one at each of the northbound and southbound I-95 ramp termini. This segment includes reconfiguration of the existing Route 3 Connector at the ramps to I-95 with single lanes in each direction flaring to two lanes at the roundabout intersections. The northbound roundabout (adjacent to the eastside of I-95) would have four legs including entrances and exits for eastbound and westbound Route 3, as well as an entrance for the I-95 northbound off-ramp and an exit for the northbound on-ramp. The southbound roundabout (adjacent to the westside of I-95) would have four legs including ramps for Route 3, Old Belgrade Road, and the I-95 southbound on/off-ramp.

⁶ Redmond, Susan. City of Augusta, Maine. "Exit 112 and 113 Environmental Assessment. Review Previous Studies." Message to Judy Lindsey, Maine Department of Transportation. May 10, 2010. E-mail.

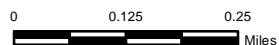
Augusta Exit 113



Preferred Alternative 2A One-way Bog Road

- Flood Insurance Rate Map Zone A
- Alternative 2A Alignment Option 1
- Alternative 2A Alignment Option 1 Buffer
- Augusta Exit 113 Modified Study Area

1 inch = 1,133 feet



Old Belgrade Road Improvement

Most of the upgrade Old Belgrade Road construction requirements for the Proposed Action would occur within the existing 66 foot ROW limits. The exceptions are: 1) the segment from the Exit 113 Interchange ramps touchdown point to the east of the entrance to the proposed MaineGeneral and (2) the Old Belgrade Road / Lower Bog Road / Route 27 Intersection.

From the I-95 Interchange roundabout touchdown point to east of Stone Brook near the entrance to the proposed MaineGeneral Hospital site Old Belgrade Road would be reconstructed with four 11-foot lanes and two five-foot shoulders. The Stone Brook culvert would be replaced and lengthened to accommodate the wider road width. From that point to Middle Road, Old Belgrade Road would have two – 11 foot lanes, one in each direction, with a 5 foot shoulder on either side. The shoulders would maintain the existing pedestrian and bicycle access along Old Belgrade Road. In accordance with the *Technical Standards Handbook For the City of Augusta, Maine* as approved by the Augusta Planning Board, August 12, 1991. Amended February 13, 2007 Old Belgrade Road would become a partial controlled access highway with a limited number of openings for future public access to adjacent parcels.⁷

Route 27/ Old Belgrade Road/Bog Road intersection

Reconfiguration of the Route 27/ Old Belgrade Road/Bog Road intersection would require modifying the Lower Bog Road between Route 27 and Old Belgrade Road to a one-way road. The one-way east bound leg would remove through traffic on Bog Road between Route 27 and the Old Belgrade Road intersection. The lower portion of Bog Road would be accessed from Old Belgrade Road.

Subject to final design proposed roadway improvements at the Route 27/ Old Belgrade Road/Bog Road intersection include the following:

- ◇ The existing configuration (skew) of the Route 27 / Old Belgrade Road intersection is a difficult maneuver for large vehicles to make a right hand turn from Route 27 to Old Belgrade Road. The Preferred Alternative includes relocating the terminus of Old Belgrade Road to across Wilson Street to form a perpendicular approach to Route 27 improving truck turning movements. Also, relocating Old Belgrade Road across from Wilson Street would eliminate signal loss time (compared to having the side streets off-set from each other); improve traffic operations and safety in the area.
- ◇ Reconfiguration of this intersection includes adding turn lanes at the following locations:
 - Northbound Route 27 right and left- turn lanes at Old Belgrade Road
 - Southbound Route 27 left-turn lane at Old Belgrade Road
 - Northbound Old Belgrade Road right-turn lane at Route 27
 - Southbound Old Belgrade Road left-turn lane at Bog Road
- ◇ Installation of a signal at the Route 27 / Old Belgrade Road intersection.
- ◇ Change the all-way stop at Old Belgrade/Bog intersection to stop on Bog Road only. A signal at the Bog Road intersection would not be needed for existing conditions but would be by the future design year.
- ◇ Realign the WB Bog Road to form a perpendicular approach to Old Belgrade Road.

Benefits of the One-way Bog Road improvements are:

- ◇ Closing the eastbound leg on Bog Road eliminates existing intersection sight distance problems caused by the skewed Bog Road / Route 27 intersection.
- ◇ Closing the eastbound leg on Bog Road eliminates the current problem of large vehicles crossing over the centerline on Old Belgrade Road when turning right onto Bog Road.

⁷ City of Augusta, Maine. Planning Department. TECHNICAL STANDARDS HANDBOOK For the City of Augusta, Maine. Augusta, Maine, Amended February 13, 2007.
Augusta, Maine -- City of Augusta, Maine - Official Municipal Government Website. 2009. Web. 16 Aug. 2010. <<http://augustame.gov/office3.com/index.asp>>.

- ◇ Although this alignment increases vehicle-miles traveled it has less overall delay when compared to the No-Build and Up-Grade alternatives. (Appendix J, 17592.00 Augusta – Exit 113 Triangle Area Traffic Analysis for additional information).



Figure 4, One-Way Bog Road with 2028 Peak Hour Volumes

Other alternatives considered and dismissed from further evaluation: -

This section documents alternatives that were analyzed to address the Purpose and Need for Exit 112 and Exit 113. The following provides the justification for dismissing these alternatives from further consideration.

The **No-Action Alternative** assumes that no further construction or major reconstruction would occur and the present level of maintenance would continue through 2028. Maintenance activities may include resurfacing, traffic lane markings, and signing, spot shoulder and drainage improvements. The No-Action Alternative is the base condition to which all other alternatives are compared.

The No-Action Alternative does not satisfy the Purpose and Need Statement or the Corps Basic Project Purpose, it was dismissed from further consideration for the following reasons;

- ◇ The consequences of not taking remedial action means that the congestion at Exit 112 will get worse causing a ripple effect on traffic throughout the Study Area including longer travel times and more off arterial system travel through neighborhoods.
- ◇ By 2028, the No-Action Alternative peak hour intersection traffic volumes associated with intersections on Civic Center Drive are projected to increase by 35 percent to 196 percent. As a result of these increases, Civic Center Drive in the vicinity of the I-95 Exit 112 ramps is forecasted to exceed capacity resulting in network gridlock.
- ◇ Future network gridlock at the Study Area intersections would operate at levels of service “F”. At levels of service “F” it can be expected that I-95 through traffic would be disrupted by queued vehicles at the Exit 112 northbound and southbound off-ramps.
- ◇ Disruption of through traffic on the Interstate System would negatively influence the mobility and safety of people and goods by impeding access to local highway and networks of public streets.
- ◇ The future No-Build traffic evaluation of the Old Belgrade Road/Route 27/Bog Road intersections shows the traffic impact of not improving the transportation system to meet future travel demand.
 - Over 128 vehicles per hour were unable to enter the roadway network because of capacity constraints.
 - In 2028 the estimated average time for a vehicle to travel through the Route 27 intersection with Old Belgrade Road would increase from 0.2 minutes in 2008 to 3.2 minutes in 2028 without any improvements.
 - The PM 95th percentile queue length for the approach to Route 27 from Old Belgrade Road and Bog Road would extend over 800 feet and approximately 1400 feet at the Old Belgrade Road and Bog Road intersection.⁸

Transportation Systems Management (TSM) – Transportation Systems Management (TSM) actions generally represent relatively low cost measures to improve traffic operations and/or enhance safety. These measures typically include traffic signal timing or phasing adjustments, designation, or exclusive turning lanes within the existing pavement area, channelization of traffic flows, driveway consolidation or controls, and adding or improving traffic signing and pavement markings to promote better directional guidance.

The Interstate Justification Report documents the numerous TSM measures that have been implemented in the transportation network serving Civic Center Drive (CCD) and Old Belgrade Road (OBR) between the years 1993 to 2008. These measures included traffic signal timing or phasing adjustments, designation, or exclusive turning lanes within the existing pavement area, channelization of traffic flows, driveway consolidation or controls, and adding or improving traffic signing and pavement markings to promote better directional guidance. Between 1993 and 2008 numerous TSM measures were implemented in the Exit 112 area to mitigate development traffic impacts.⁹ The projected traffic

⁸ Ibid, page 4.

⁹ Gorrill-Palmer, Access Justification Report pages 55 to 57.

increase at Exit 112 cannot be maintained by additional TSM strategies; therefore, the TSM Alternative does not satisfy the Purpose and Need Statement or the Corps Basic Project Purpose as it would not be a viable solution to accommodate future traffic needs in the Study Area.

Transportation Demand Management (TDM) - TDM efforts are a means of reducing traffic demand during peak periods by developing park-and-ride lots and ride-share programs (e.g., carpools or vanpools), encouraging flex-time work programs with employers and compressed work week schedules, and encouraging alternative modes of transportation such as bicycling and bussing.

The existing park-and-ride lot at Exit 112 and the following transit alternative are examples of TDM implemented in the study area.

Transit - The transit service operated by the Kennebec Valley Community Action Program (KVCAP) is a second example of a TDM alternative operating in the study area. During 2008 and 2009 Tom Crikelair Associates developed a *Transit Evaluation and Plan for Waterville, Augusta, and Gardiner*,¹⁰ the results of this report are hereby incorporated by reference. (Appendix D) The transit study addressed fixed-route transit services operated by Kennebec Valley Transit (KV Transit). This work was done for KVCAP, with funding from the Maine Department of Transportation. The goal of this planning effort is to increase the usefulness and effectiveness of transit alternatives in Augusta, Gardiner, and Waterville by improving the quality of existing services, and by adding features that will appeal to and benefit more local residents. The KVCAP transit report Section 3.2, pages 3-6 to 3-11 provides the analysis of the Augusta transit service pertinent to TDM options considered in the EA Study Area.

Appendix K, the *Transit Evaluation and Plan for Waterville, Augusta, and Gardiner* report states the proposed Exit 113 enhancements could provide greater viability for transit compared to an existing or enhanced Exit 112. The benefits of a modified Exit 113 for transit services include:

- ◇ Provides a direct link between I-95 and Old Belgrade Road resulting in fewer miles traveled for the Waterville-Augusta bus route; and
- ◇ The Exit 113 proposed link to the west would reduce running time by five minutes for the Waterville-Augusta bus route.

Expanding transit service in the Study Area is projected to remove 16 to 30 local vehicles and 25 to 30 Waterville commuter vehicles in the Midday and PM peak hours. After a new regional hospital is developed on Old Belgrade Road, an additional 30 to 40 Waterville commuter vehicles could be eliminated during the Midday and PM peak hours.

Neither TDM alternative satisfies the Purpose and Need Statement or the Corps Basic Project Purpose, as the operations benefits of expanding transit service into the Study Area or the utilization of the park-and-ride facility are substantial enough to suggest transit as a stand alone solution for traffic relief at Exit 112. The transit alternatives do not provide congestion relief or reduce the number of high crash locations within the Study Area.

As transit has the potential to reduce vehicle demand in the area and provides residents an alternative transportation mode, it should continue to be considered as a complementary alternative to this capacity

10 Tom Crikelair Associates with Richard Tolmach. Transit Evaluation and Plan for Waterville, Augusta, and Gardiner Final Report. (Bar Harbor, Maine, October 9, 2009).

11 Belz, Darryl, Maine Department of Transportation. "Pin # 17592.00 Old Belgrade Road and Exit 113 Improvements, Construction Estimate." Message to Judy E. Lindsey, Maine Department of Transportation. 16 Aug. 2010. E-mail.

12 Gorrell-Palmer, Access Justification Report, p. 63.

13 Maine Department of Transportation. Bureau of Transportation Systems Planning. 17592.00 Augusta – Exit 113 Triangle Area Traffic Analysis. By Dennis Emidy. Augusta, Maine, 2010. Print.

14 Ourston Roundabout Engineering. Roundabout Operation Analysis and Design Services, Proposed Roundabout at Civic Center Drive/Old Belgrade Road/Bog Road, Augusta, Maine. Tech. no. Ourston Project Number: 09909. Madison, Wisconsin, July 16, 2010. Print, Figure 1, Civic Center Drive/Old Belgrade Rd/Bog Rd – Multi-Lane Configuration, page 2.

improvement alternative.

Exit 113, Other Build Alternatives Considered

Interchange Alternative 1, I-95/Route 3 Connector Interchange Modification, with Signalized Exit 113 Ramps. This alternative proposed replacing the current trumpet ramp design with a hybrid partial cloverleaf configuration using the existing loop ramp in the northwest quadrant and constructing a new loop ramp in the northeast quadrant. This alternative consists of a signalized intersection on the I-95 southbound ramp terminal and an un-signalized intersection on the I-95 northbound ramp terminal. With the 2028 volume projections, the northwesterly intersection requires four lanes on all approaches. This configuration includes a left turn, two through lanes, and a right turn for the Route 3 Connector approaches and dual lefts, a through, and a right turn lane for the I-95 southbound ramp and Old Belgrade Road approaches.

Interchange Alternative 1, partially satisfies the NEPA Purpose and Need and the Corps Basic Project Purpose; it was dismissed from further consideration for the following reasons:

- ◇ The traffic queues from the left turn lanes would introduce new conflict points at the Exit 113 interchange by disrupting the free flowing nature and driver expectation of the I-95 mainline through traffic.
- ◇ When compared to a round-about configuration at the ramps the signalized intersections require substantially more pavement width, higher right-of-way acquisition requirements, and increases the environmental impacts associated with the number of through and turning lanes needed to accommodate the projected traffic.
- ◇ Higher construction cost and environmental impacts of the signalized interchange associated with extending the ramps to reduce the queue length impact on I-95 mainline through traffic.
- ◇ Preliminary construction costs of just the interchange portion of the Exit 113 alternatives - Alternative 1; the Signalized Interchange is \$11 million versus \$5.1 million (2010 dollars) for Alternative 2 the Preferred I-95 Interchange round-about configuration.¹¹ Note: total construction cost for Exit 113 is determined by adding the cost of Alternative 1 or Alternative 2 to the cost of the connection from the I-95 ramps to Route 27 and one of the Alignment Option reconfigurations of the Old Belgrade Road / Bog Road / Route 27 intersection.

Exit 113, Segment 2, Old Belgrade Road Alignments 1B and 2B, New Alignment Connector Road

The Old Belgrade Road Alignments 1B and 2B consist of a new alignment connector road approximately one-half mile long. The connector would serve as a relocation of the northwesterly end of Old Belgrade Road from just west of the Stone Brook crossing near Exit 113 to an intersection point on Civic Center Drive, Routes 8/11/27 in the vicinity of Commerce Drive. Alignments 1B and 2B would be a partial controlled access highway with a limited number of openings for future public access. Additional information and the concept for the new highway connector, OBR Alignments 1B and 2B are available in Appendix A and shown on Figure 18 of the *Draft Access Justification Report*.¹²

Alignments 1B and 2B satisfy both the NEPA Purpose and Need for and the Corps Basic Project Purpose of the Agency's Preferred Alternative. These Alignments were dismissed for the following reasons:

- ◇ Approximately \$10 million cost for rock excavation for the connector between Old Belgrade Road and the Commerce Center driveway on Route 27.
- ◇ Other alignment options are available that avoid the impacts to unfragmented wildlife habitat and vernal pools.

Segment 3, Old Belgrade Road / Bog Road / Route 27 Intersection Alignment Options

Four Alignment Options were considered for the Old Belgrade Road / Bog Road / Route 27 intersection, all of the intersection alignment options satisfy the Purpose and Need and the U.S. Corps Basic Project Purpose to different levels of acceptable traffic operations. As a means of explaining the operational efficiency the *17592.00 Augusta – Exit 113 Triangle Area Traffic Analysis, Appendix J* is hereby incorporated by reference.¹³

Alignment Option 1 (AO1) Close East Bound Leg of Bog Road

The Close East Bound Leg on Bog Road alignment option would remove through traffic on Bog Road between Route 27 and the Old Belgrade Road intersection. Vehicles that currently use that leg of Bog Road would now need to travel to a new signalized intersection across from Wilson St (just south of the current Route 27 / Old Belgrade Road intersection).

Intersection Alignment Option 1 was dismissed from further consideration as:

- ◇ Of the four build options under consideration for the intersection configuration at Route 27, Old Belgrade Road and Bog Road Intersection Alignment Option 1 is the least effective in satisfying the NEPA Purpose and Need for and the Corps Basic Project Purpose.
- ◇ Alignment Option 1 increases vehicle-miles traveled but has less overall delay compared to No-Build (Appendix J, Table 1, page 3) and Up-Grade alternative (Appendix J, Table 3, page 6).

Alignment Option 3 (AO3) Relocation of Old Belgrade Road at Bog Road

Alignment Option 3 would relocate Old Belgrade Road from approximately 700 feet south of the Bog Road / Old Belgrade Road intersection to Route 27. This alignment removes through traffic from the southbound and eastbound approaches to the Old Belgrade / Bog Road intersection. Southbound Route 27 vehicles that currently turn left at Old Belgrade Road would now turn left at a new Route 27 intersection. Vehicles that currently turn right onto Bog Road would now turn right on the relocated Old Belgrade Road and then turn left at a new intersection to continue onto Bog Road.

Intersection Alignment Option 3 was dismissed from further consideration as:

- ◇ There would be a steep grade on the Relocated Old Belgrade Road from Route 27 to Old Belgrade Road.
- ◇ Removes through traffic on Old Belgrade Road, between the existing Bog Road and Route 27, relocating all traffic into one intersection.
- ◇ Overall Alignment Option 3 has the longest delays compared to the other alternatives and is second only to the Close EB Leg of Bog Road alternative in the most vehicle-miles traveled. (Appendix J, Table 9, page 17)

Alignment Option 4 (AO4), Roundabouts

Alignment Option 4, the roundabout conceptual design was developed to accommodate large trucks (WB-67), provide adequate sight distance and vision outlook, provide capacity for anticipated traffic growth, and provide natural vehicle paths. The entry geometry of the roundabout was designed to deflect traffic in order to slow speeds below 27 miles per hour and reinforce the yielding process. The slower speeds and the yielding to circulating traffic effects the frequency and severity of collisions between entering and circulating traffic. This alignment would be constructed as a multi-lane roundabout but initially striped as a single lane facility with a wide shoulder. The second travel lane would be placed in operation when warranted by traffic volume. The future configuration would be two lane ramps on northbound Civic Center Drive and northwest bound Old Belgrade Road and single lane ramp on southbound Civic Center Drive and Bog Road.¹⁴

Although Intersection Alignment Option 4 satisfies the NEPA Purpose and Need and the Corps Basic Project Purpose it has been dismissed from further consideration as:

- ◇ Requires three (3) additional residential acquisitions and
- ◇ Alignment Option 4 is the most expensive of the Intersection Alignment Options.

Exit 112 Alternatives Considered and Dismissed from Further Consideration

Two alternatives were considered for Exit 112 and are identified as Exit 112, Alternative 3, six-lane Civic Center Drive with four signalized intersections and Exit 112, Alternative 4, six-lane Civic Center Drive with four roundabout intersections. Either alternative widens Civic Center Drive and the I-95 overpass bridges to accommodate six lanes. The required widening on Civic Center Drive would necessitate the acquisition of numerous businesses thereby substantially impacting the city of Augusta's tax base. The Exit 112 alternatives would only partially satisfy the NEPA Purpose and Need or the Corps Basic Project Purpose. Collectively the Exit 112 alternatives were dismissed from further consideration for the following reasons:

- ◇ The existing Exit 112 ramps to/from I-95 and the immediate corridor along Civic Center Drive are currently at capacity during the Midday and PM-peak hours causing queuing problems such as:
 - Queues up to a half mile in length along Civic Center Drive,
 - Long queues will impede side street access;
 - queues backing onto the I-95 southbound mainline will effect through traffic operations;
- ◇ In 2028 four intersections with Civic Center Drive would operate at or near capacity (LOS E) or have a breakdown in traffic flow (LOS F).
- ◇ The Exit 112 alternatives would require the acquisition of the most right-of-way of all proposed alternatives(exceed \$10 million)
- ◇ Required right-of-way acquisitions would substantially reduce the city of Augusta's taxable properties.

Implementation of either Exit 112 alternative would temporarily cause severe restrictions to the already congested traffic network in the area, as well as, accessibility to adjacent properties.

NEPA DETERMINATION

	No	Yes
<u>Public Involvement</u> – Is there substantial public opposition to proposed action? To date there has been no substantial public opposition to the proposed action.	X	
<u>Right-of-Way</u> – Does action include a residential or commercial displacement, or acquisition of property rights that will result in substantial abutter impacts?		X
<u>Hazardous Materials</u> – Are there any known State or Federal Uncontrolled Oil and Hazardous Material sites within or adjacent to the action?	X	
<u>Cultural Resources (Section 106)</u> – Has the State Historic Preservation Officer (SHPO) concurred that the proposed action will have other than “no effect” on the properties eligible for or listed in the National Register of Historic Places?		X
<u>Section 4(f) or 6(f)</u> – Does action require use of any property protected by Section 4(f) of the Department of Transportation Act (except for Transportation Enhancement requisitions and preservation of historic sites), or Section 6(f) of the Land and Water Conservation Fund Act?	X	
<u>Wetlands</u> – Does action require an Army Corps of Engineers Programmatic Category III (Individual) Permit?	X	
<u>Sole Source Aquifers</u> – Is action over a sole source aquifer?	X	
<u>Wild and Scenic Rivers</u> – Is action in, across or adjacent to a river designated as a component or proposed to be included in the National System of Wild and Scenic Rivers?	X	
<u>Scenic Byways</u> – If action is proposed on or adjacent to any State or Federal designated Scenic Byway, has MaineDOT determined that the action would have an adverse effect on the Byway (according to the Scenic Byways Coordinator, Scenic Byways Board, and Corridor Management Committee/Plan, as appropriate)?	X	
<u>Noise</u> – Do impacts of action fail to conform to the Noise Abatement Criteria levels (23 CFR 772) and MaineDOT Noise Policy?	X	
<u>Air Quality</u> – Does the proposed action fail to meet Air Quality and/or Conformity requirements?	X	
<u>Endangered Species</u> – If action is proposed in an area known to have Federally listed Endangered Threatened Species or Critical Habitat, will the action affect any of these resources?	X	
<u>Other</u> – Does action adversely impact any known critical or unique natural resource, the quality of adjacent surface water resources, community cohesiveness, planned community growth, or beneficial land use patterns? Traffic		X

SUPPORT DOCUMENTATION

Public Involvement– Is there substantial public opposition to proposed action?

The following meetings were held during the preparation of the *Draft Augusta, Maine Exit 113 Interstate Justification Report* (IJR, 2010) [Appendix B] and this Environmental Assessment:

- ◇ April 28, 2008 informational meeting at Augusta City Hall: The meeting explained the study process and presented the draft purpose and need statement
- ◇ April 30, 2008 study outline meeting at Augusta Board of Trade (ABOT) office: The meeting outlined the study process and the potential benefits
- ◇ May 12, 2008 informational meeting at Augusta City Hall: The meeting presented the existing conditions and draft purpose and need statement
- ◇ February 5, 2009 study update and next steps at MaineDOT office: The meeting presented the existing / future traffic conditions and discussed possible strategies for next steps
- ◇ February 12, 2009 study update meeting at ABOT meeting: The meeting presented the existing / future traffic conditions and range of alternatives
- ◇ February 26, 2009 informational meeting at Augusta City Hall: The meeting presented the existing / future traffic conditions and range of alternatives
- ◇ January 12, 2010 Federal and state Interagency Meeting at MaineDOT: the meeting presented the NEPA Purpose and Need; discussed the U.S. Corps of Engineers (Corps) Highway Methodology preparation of the Basic Project Purpose for the modification of the Exit 113 interchange; presented the range of alternatives and resources that may be of concern to the various state and federal agencies. The only issue presented by the agencies was potential indirect and cumulative impacts to natural resources.
- ◇ May 11, 2010 federal, state and local Interagency Meeting at MaineDOT: Discussion and agreement that the Corps Highway Methodology is no longer applicable to Augusta, Exit 113.
- ◇ June 8, 2010 e-mail from Jay Clement, U.S. Corps of Engineers to Judith Lindsey, MaineDOT: NEPA Administrative file documentation of the Corps preliminary decision the New England Highway Methodology (HM) is no longer applicable to Augusta, Exit 113. This determination will be valid as long as MaineDOT's preliminary assessment of impacts to the Waters of the U.S. does not increase from that presented at the May 11, 2010 Interagency meeting. [Appendix A]

Right of Way / Land Use Provide permanent and temporary right-of-way amounts in acres. Break proposed right-of-way amount into land use classification and give typical and maximum right-of-way widths (existing and proposed)

Right-of-Way

The right-of-way estimate is based on the construction of the Preferred Alternative occurring mostly within the existing width of 66 feet on Old Belgrade Road. Estimates for all alternatives including the Preferred Alternative are very rough and will require refinement during final design. All of the alternatives have the same estimated cost from the Interstate to the NRF property just east of the Bog Road. This cost is estimated at **\$618,000** and includes the acquisition of two residences and one vacant land parcel (The vacant parcel has received city of Augusta approval for a subdivision). The Augusta–Exit 113 / Old Belgrade Road Preliminary R/W Cost Estimates memorandum dated July 21, 2010 includes a discussion of all Intersection Alignment Option right-of-way costs.¹⁵

¹⁵ Avore, Scott. Augusta–Exit 113 / Old Belgrade Road Preliminary R/W Cost Estimates. Tech. Augusta, Maine, 2010. Print

The Preferred Intersection Alignment Option 2, the One-Way Bog Road alignment requires an additional **\$325,000** in the cost of right-of-way as it includes acquiring one additional residence and one additional vacant land parcel. Total right-of-way acquisition for the Preferred Alternative is three residences and two vacant land parcels.

Existing Land Use and Zoning

Current zoning for the study area is split between six different districts, with five being primarily non-residential in nature. Existing land uses in the study area mirror the existing zoning of the area. Augusta's 2007 Comprehensive Plan, found consistent with the State's Growth Management Act by the Maine State Planning Office, identifies the study area as part of the larger "economic growth" area of the city, following the development trends that started thirty years ago.¹⁶

The southern end of the study area, along Townsend Road, Northern Ave, and much of Old Belgrade Road east of I-95, is zoned for residential use at a density that allows one dwelling unit per 5,000 square feet of land. This section of the study area consists of relatively dense single-family detached residential structures, with some additional room for new units. Since 1990 there have been very few new residential units constructed totaling ten new dwelling units, with another 15 anticipated in the near future and the possibility of 50 to 100 more in the coming 20 years. The area is very close to local services, is served by public water and sewer, and provides a relatively quiet setting.

The area, bisected by I-95, Exit 112 and Civic Center Drive, is zoned for large commercial and other non-residential activities similar to the existing uses. This area is a primary driver of economic, cultural, and educational activities in Augusta and is anticipated to continue to serve the same functions. The dominant land uses in the vicinity of Exit 112 include the Augusta Civic Center, the University of Maine at Augusta (UMA), the Augusta Business Park, and the Market Place at Augusta. The Market Place at Augusta is a retail center that started development in 1990 with the construction of Wal-Mart and now includes nearly 675,000 square feet of retail space, with one remaining development phase available. Construction of the remaining phase of the Market Place would open traffic onto Old Belgrade Road. UMA has expressed an ongoing interest in expansion, with the possibility of residential facilities being added in coming decades. The campus is currently a commuter-only facility.

Since 1990 other new development that has occurred in the area bisected by I-95, Exit 112 and Civic Center Drive includes:

- 1) In front of the Augusta Civic Center, development has occurred slowly but continuously since the Civic Center construction in 1975. Since 1990, 88,890 square feet of business, medical and education facilities construction has occurred in this area of Civic Center Drive.
- 2) The area from the Augusta Business Park to the Leighton Road intersection with Civic Center Drive has been the focus of industrial and office space development since the early 1980s, with retail, hotel, and other uses slowly starting to fill in some of the remaining parcels. Since 1990, 202,800 square feet of construction has occurred in this sector of the study area including restaurants, retail stores, and a regional bus terminal. Nearly all residential units remaining in this area are for sale.

The northern portion of the study area presents two very distinct land use types, one along Civic Center Drive and the other along Old Belgrade Road. Both areas are changing rapidly as this is the area with the greatest amount of available land. Industrial developments have been located in the area since the early 1980's when Digital Equipment constructed a very large manufacturing facility on Civic Center Drive. The Digital Equipment facility has since been converted to accommodate a variety of business related offices. Since 1990 over 296,300 square feet of additional retail, office, service and manufacturing development intermixed with 14,100 square feet of new residential development has

16 Nazar/ Deputy Director of Development Services, Matthew. "Exit 112/113 Land Use, Zoning, Community Characteristics and Community Cohesion." Letter to Judith Lindsey. 25 Nov. 2009. MS. Maine Department of Transportation, Augusta, Maine.

occurred between the Leighton Road intersection with Civic Center Drive and the intersection of Civic Center Drive and Old Belgrade Road.

Zoning and land use adjacent to the east of Exit 113 and along the northeast side of Old Belgrade Road is within the Medical District. The Medical District is focused primarily on uses related to the existing Harold Alfond Center for Cancer Care, the proposed location of the future regional MaineGeneral Medical Center and a future comprehensive medical campus. The area immediately to the southwest of Old Belgrade Road is currently zoned for mixed uses similar to the zoning along Civic Center Drive, but Augusta's 2007 Comprehensive Plan recommends a re-assessment of this area to possibly refocus it on medical uses.

The final zoning district in the study area is located at the extreme northern end of the study area and of a less intense mixed use nature. Directly on Civic Center Drive the uses are expected to be non-residential, but for the Old Belgrade Road / Bog Road intersection, where it will likely remain residential.

Hazardous Materials – Is there any additional evaluations or remediation work that has to be done regarding hazardous or contaminated material? If so, please explain.

A Maine Department of Transportation (MaineDOT) Environmental Office investigation specific with this project encountered data suggesting petroleum related contamination was present near the touchdown point of the western interchange ramp and Old Belgrade Road. Subsequent on-site work failed to unearth any issues within these areas. However, in light of the available environmental data, the contractor shall employ appropriate health and safety measures to protect its workers against hazards associated with working near petroleum-impacted soils. Furthermore, the Contractor shall remain alert for any additionally evidence of contamination.

Cultural Resources – Summarize the Section 106 process including any historic architectural and archaeology resources.

There are no Section 106 resources impacted by the Proposed Action.

Section 4(f) – If Section 4(f) property is being used, indicate which type of Section 4(f) evaluation applies. Also, in a few paragraphs describe below or attach (1) a list of 4(f) properties near the project, (2) a description and list of the 4(f) properties impacted, (3) the views of official with jurisdiction, and (4) any appropriate photos or plan sheets.

De Minimis		Historic sites		Bikeways and Walkways	
Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges		Historic bridges		FULL (DOI & legal review)	

There are no Section 4(f) resources impacted by the Proposed Action.

Section 6(f)

There are no Section 6(f) resources impacted by the Proposed Action.

Wetlands – Describe or attach (1) wetland size and impacts

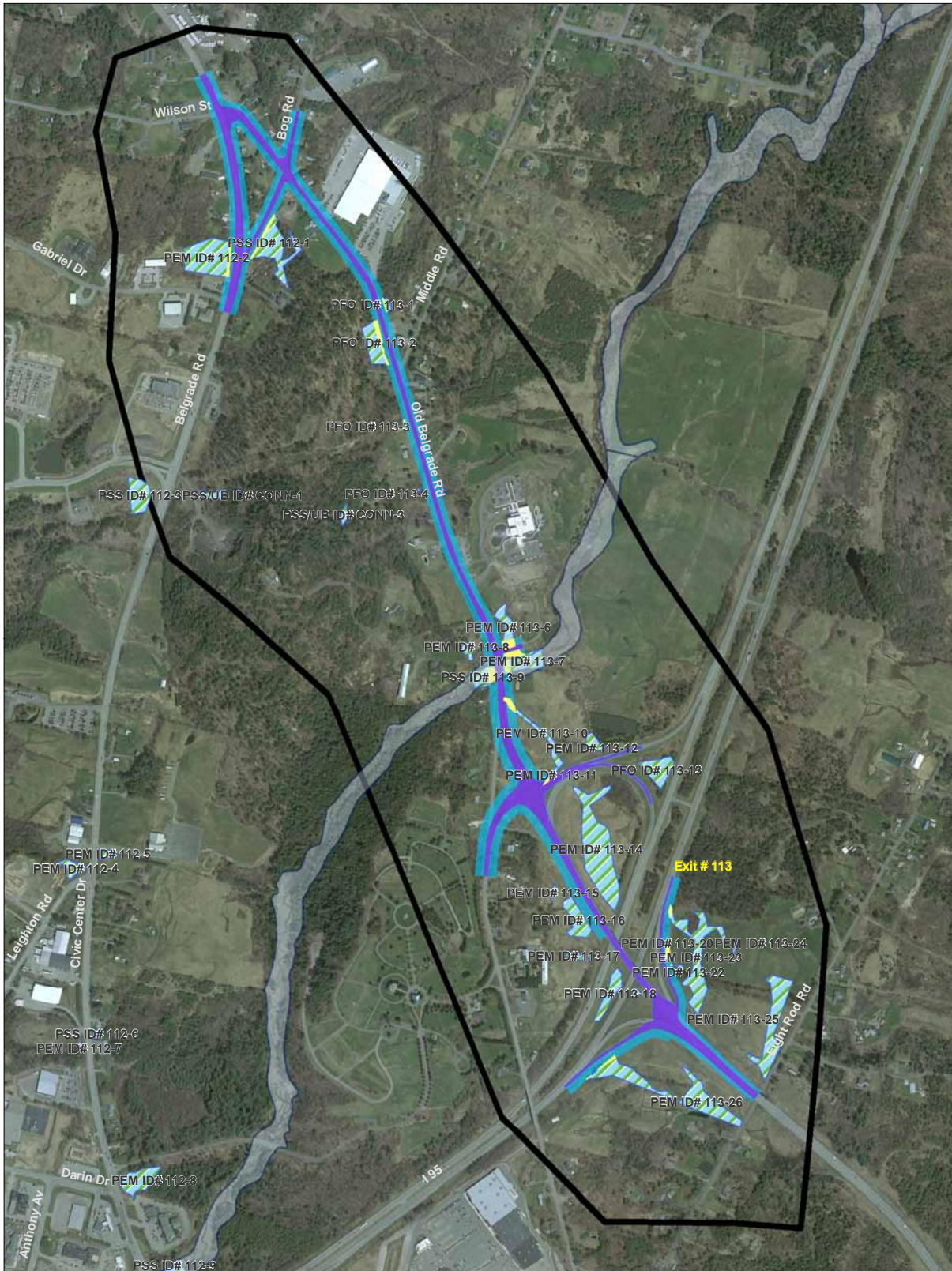
The Augusta Exit 113 – Route 3 to Route 27 Traffic Study Natural Resource Existing Conditions Technical Memo Report¹⁷ conducted an in-depth analysis of the aquatic resources present in the study area and those impacted by the Preferred Alternative.

Waterways- Streams








One perennial stream, Stone Brook, occurs in the Study Area. This stream is a tributary of Bond Brook, which flows into the Kennebec River. The brook is low gradient with natural falls located downstream of Route 27 that impedes movement of aquatic organisms. Stone Brook includes a broad, flat floodplain that is vegetated and seasonally flooded.

¹⁷ Maine Department of Transportation, Environmental Office. Augusta Exit 113 - Route 3 to Route 27 Traffic Study, Natural Resource Existing Condition Technical Memo Report. Tech. Augusta, Maine, July 2010. Print.

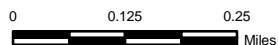
Augusta Exit 113



Wetlands Impacts Alternative 2A Alignment Option 2

- 
- | | | | |
|---|---|---|--------------------------------------|
|  | Flood Insurance Rate Map Zone A |  | Augusta Wetlands 12-28-09 |
|  | Alternative 2A Alignment Option 2 Wetland Impacts |  | Augusta Exit 113 Modified Study Area |
|  | Alternative 2A Alignment Option 2 | | |
|  | Alternative 2A Alignment Option 2 Buffer | | |

1 inch = 1,133 feet



Wednesday, August 26, 2010



The Natural Resources Technical Memo includes a description and the functions and values for the existing wetland complexes that occur in the Study Area. These wetlands are located mainly along overland topographical drainages or at the base of steep slopes. The Study Area is highly developed with wetland complexes that are fragmented by existing or proposed development features.

The Preferred Alternative will impact approximately one acre of wetlands including 0.7 acres of Palustrine Emergent, 0.15 acre of Palustrine Forested and 0.25 acre of Palustrine Scrub Shrub. MaineDOT was advised by the Corps and DEP that mitigation in the form of a payment to the DEP In-lieu Fee Compensation Program (ILF) would be acceptable.

Sole Source Aquifers - Describe or attach (1) plans showing extent, and (2) coordination conducted to-date with the USEPA/MDEP.

There are no Sole Source Aquifers located within the Study Area

Wild and Scenic Rivers -Is action in, across or adjacent to a river designated as a component or proposed to be included in the National System of Wild and Scenic Rivers?

There are no Wild and Scenic Rivers within the Study Area.

Scenic Byways- If action is proposed on or adjacent to any State or Federal designated Scenic Byway, has MaineDOT determined that the action would have an adverse effect on the Byway (according to the Scenic Byways Coordinator, Scenic Byways Board, and Corridor Management Committee/Plan, as appropriate)?

There are no scenic byways in the Study Area.

Noise – Summarize or attach noise analysis, including where noise abatement may be reasonable and feasible.

A highway traffic noise analysis was prepared to determine the potential noise impacts associated with the transportation alternatives presented in the Environmental Assessment (EA). The highway traffic noise levels were predicted for the existing condition (2008) and the future No-Build and Build Alternatives for the design year (2028).

The noise analysis was conducted in accordance with the following Federal Highway Administration (FHWA) and Maine Department of Transportation (MaineDOT) regulatory and policy guidelines:

- Title 23 Code of Federal Regulations Part 772 Procedures for Abatement of Highway Traffic Noise and Construction Noise. (23 CFR 772);
- FHWA Highway Traffic Noise and Abatement Policy and Guidance, June 1995, and;
- MaineDOT Highway Traffic Noise Policy, May 2008.

A total of 103 receivers within three Noise Sensitive Areas (NSAs) were analyzed in the study area. NSAs are defined as existing or future planned residential development likely to be affected by traffic noise from the proposed project. Generally, NSAs are identified and delineated by changes in traffic conditions, roadway configurations, topography, and community boundaries.

The 3 NSAs identified in the Study Area are:

NSA-1 is comprised of a rural residential area adjacent to the intersection of Old Belgrade Road and Bog Road. Traffic on Civic Center Drive and Old Belgrade Road is the primary source of noise in NSA-1.

NSA-2 is comprised of a rural residential area adjacent to the intersection of Old Belgrade Road and Middle Road. Traffic on Old Belgrade Road is the primary source of noise in NSA-2.

NSA-3 is comprised of a rural residential area along Old Belgrade Road and adjacent to the I-95 Exit

113 southbound ramps. Traffic noise from I-95 and Exit 113 southbound ramps is the primary source of noise in NSA-3.

Noise abatement measures were evaluated for all impacted receivers within the study area. Traffic management, alignment modification, property acquisition, and noise barriers were determined not to be feasible or reasonable methods to reduce the predicted traffic noise levels for the impacted sites. Noise abatement is not required based upon 23 CFR 772 and the MaineDOT Highway Traffic Noise Policy. Noise abatement measures were evaluated for all impacted receivers within the study area. Hereby incorporated by reference and located in Appendix D is the Maine Department of Transportation *Highway Traffic Noise Analysis Technical Memorandum*.

Air Quality – If it is anticipated that this is an added capacity project, please submit a build/no-build comparison of vehicle-miles-traveled of the project area to the Bureau of Planning for inclusion in the Conformity Analysis of the next Long Range Transportation Plan or Statewide Transportation Improvement Program.

The Clean Air Act established National Ambient Air Quality Standards (NAAQS) for six priority pollutants to protect public health and the environment. Areas that do not meet the NAAQS are designated as nonattainment areas and, as a result, are subject to transportation conformity. Maintenance areas are geographic regions that were previously designated as nonattainment, but are now consistently meeting the NAAQS. Transportation conformity requires nonattainment and maintenance areas to demonstrate that all future transportation projects will not hinder the area from reaching and maintaining its attainment goals.

Maine currently has two regions (Portland and Midcoast) designated as maintenance areas for the 8-hour ozone standard and one small area (downtown Presque Isle) designated as a maintenance area for PM₁₀. No carbon monoxide, lead, nitrogen oxides, or sulfur dioxide nonattainment areas have been identified in Maine.

The project is located within Kennebec County, an area that has been identified as being in attainment for the 8-hour ozone standard and all other NAAQS; therefore transportation conformity does not apply.

Threatened and Endangered Species/Essential Fish Habitat – Include summary of coordination with USFWS/MDIF&W.

There are no threatened and Endangered Species or Essential Fish Habitat located within the Study Area.

Other– Traffic

The *Interstate Access Report*¹⁸ documents the traffic volume analysis conducted to demonstrate how the proposed Exit 113 modifications will affect traffic volumes at representative locations along Civic Center Drive in the design year 2028. PM Peak Hour traffic volumes entering the intersections identified in the first column of Table 1, Summary of Existing and Projected Civic Center Drive Intersection Total Entering PM Peak Hour Volume Comparison, are forecast to decrease along the Civic Center Drive corridor with the modification of Exit 113 compared to No-Build Alternative in 2028. The largest decreases are anticipated on Civic Center Drive from I-95 on/off-ramps north to Gabriel Drive with marginal decreases at Garden Court and Townsend Road.

¹⁸ Gorriell-Palmer, Access Justification Report page 82.

Table 1 Summary of Existing and Projected Civic Center Drive Intersection Total Entering PM Peak Hour Volume Comparison.¹ (vph – vehicles per hour)

Intersection	Existing Year 2008 (vph)	Future Year 2028 without Exit 113 Build	Percent Difference Over 2008 <i>without</i> Exit 113 Build	Future Year 2028 with Exit 113 Build (vph)	Percent Difference Over 2008 <i>with</i> Exit 113 Build	2028 Vehicles Difference with Exit 113 Build (vph)
Townsend Road	1807	2480	+37%	2402	+33%	-78
Garden Court	2538	3507	+38%	3281	+29%	-226
I-95 NB on/off ramp	2703	4546	+68%	3973	+47%	-573
I-95 SB on/off ramp	2479	5421	+119%	4404	+78%	-1017
Darin Drive	1657	4360	+163%	3408	+106%	-952
Leighton Road	1666	3806	+128%	3056	+83%	-750
Commerce Drive	1397	3160	+126%	2473	+77%	-687
Gabriel Drive	1229	2544	+107%	1992	+62%	-552

In 2010 the average daily traffic on the existing Old Belgrade Road west of I-95 is 12,100. The projected average daily traffic on the same segment of Old Belgrade Road with the modified ramps to Exit 113 is 17,700. Figures 13 and 14 in the *Access Justification Report, Appendix B* show a forecast reassignment of traffic due to the construction of a full access interchange to Belgrade Road (Route 8/11/27).

Old Belgrade Road Traffic

2010 AADT	12,100
2030 AADT	17,700
DHV	10%
Design Hourly Volume	1771
% Heavy Trucks AADT	9%
% Heavy Trucks DHV	7%
Direct Dist (DHV)	60%
18-Kip Equivalent P2.0	994

¹ Gorrill-Palmer, Access Justification Report

Table 1 Summary of Existing and Projected Civic Center Drive Intersection Total Entering PM Peak Hour Volume Comparison.¹⁹ (vph – vehicles per hour)

Intersection	Existing Year 2008 (vph)	Future Year 2028 without Exit 113 Build	Percent Difference Over 2008 <i>without</i> Exit 113 Build	Future Year 2028 with Exit 113 Build (vph)	Percent Difference Over 2008 <i>with</i> Exit 113 Build	2028 Vehicles Difference with Exit 113 Build (vph)
Townsend Road	1807	2480	+37%	2402	+33%	-78
Garden Court	2538	3507	+38%	3281	+29%	-226
I-95 NB on/off ramp	2703	4546	+68%	3973	+47%	-573
I-95 SB on/off ramp	2479	5421	+119%	4404	+78%	-1017
Darin Drive	1657	4360	+163%	3408	+106%	-952
Leighton Road	1666	3806	+128%	3056	+83%	-750
Commerce Drive	1397	3160	+126%	2473	+77%	-687
Gabriel Drive	1229	2544	+107%	1992	+62%	-552

¹⁹ Gorrill-Palmer, Access Justification Report

SUPPLEMENTAL INFORMATION

Early Coordination

Early Coordination with the federal and state resource agencies was conducted at the January 20, 2010 MaineDOT monthly Interagency meeting. The agencies indicated their primary concern was the identification and analysis of Indirect and Cumulative impacts on natural resources.

Relocations – Describe any relocations.

The Preferred Alternative will require the acquisition of three residences and two vacant land parcels; one of the vacant parcels includes a subdivision approved by the city of Augusta.

Flood Plain Encroachments/Stream Channel/Waterway/Groundwater/Water Table – Describe any effects the project might have on flood plain, stream channel, waterways, groundwater, and the water table.

Only one perennial stream, Stone Brook, occurs in the study area. Stone Brook is a slow moving- mostly impounded stream segment. Stone Brook has a broad flooded floodway, with some remaining storage. Stone Brook is a tributary of Bond Brook, which flows into the Kennebec River. There are natural falls downstream of Route 27 that impede movement of aquatic organisms. There is a broad, flat floodplain located at the crossing of Old Belgrade Road that is vegetated and seasonally flooded. Replacement of the Stone Brook culvert will have minor impacts to the immediately adjacent stream channel and floodplain.²⁰

MaineDOT and FHWA are required by law to comply with Executive Order 11988, *Floodplain Management*. To ensure compliance, MaineDOT evaluates each project to assess and reduce the long- and short term adverse impacts associated with the occupancy and modification of floodplains.

Agriculture Describe or attach (1) amount of prime and non-prime farmland impacted, (2) discuss farmland conversion impacts, and (3) Farmland Conversion Impact Rating Sheet (Form AD-1006), if applicable.

On August 24, 2010 Form NRCS-CPA-106 for the four Exit 113 build alternatives was submitted to the Kennebec County Natural Resource Conservation Services (NRCS) for their consideration of farmland conversion impacts.

On September 6, 2010 NRCS returned the completed Farmland Conversion Impact Rating form for Exit 113 stating the FPPA does not apply. (see Appendix G, NRCS, Farmland Conversion Impact Rating For Corridor Type Projects)²¹

Socioeconomic – Describe or attach temporary and permanent economic and social effects of the proposed project.

The Proposed Action is located within the area of Augusta identified for encouraging economic growth. The north side of Old Belgrade Road from I-95 to Middle Road has been zoned as a Medical District. Currently, there is a downturn in the state and national economy. These larger scale economic conditions affect the pace of new pre-approved development in the study area. Nonetheless, there is an excellent economic environment in the study area for several reasons. The zoning is conducive to commercial development. There is a history of successful development in the area.

²⁰ Maine Department of Transportation, Environmental Office. Augusta Exit 113 - Route 3 to Route 27 Traffic Study, Natural Resource Existing Condition Technical Memo Report. Tech. Augusta, Maine, July 2010. Print

²¹ Natural Resources Conservation Service. "Farmland Conversion Impact Rating For Corridor Type Projects." Letter to Richard Bostwick. 06 Sept. 2010. MS. Maine Department of Transportation, Augusta, Maine.

The City of Augusta identifies the following positive traits for development to continue to occur in the study area:

- ◇ Availability of large tracts of undeveloped land
- ◇ Limited residential neighborhood development
- ◇ Good potential access to infrastructure.

Detours/Traffic Maintenance – Describe any detours used during construction.

Most of the construction activities required to modify the westside ramp system of Exit 113 will occur off roadway, therefore, minimizing impact to traffic. Reconstruction of Old Belgrade Road and the intersection at Route 27 will cause sporadic traffic delays. Construction equipment and contractors will be accessing the area for two construction seasons. No major long-term roadway closures are expected during project construction.

Other construction projects – Describe other roadway design or construction projects in the area.

There are no known roadway projects identified at this time. However, it is anticipated the new MaineGeneral Medical Center to be located off of Old Belgrade Road may be under construction simultaneous to the construction of the modified Exit 113.

Permits/Mitigation – Are there any permits that must be applied for in final design? If so, list them. What are the current mitigation requirements for this project? Differentiate between “Firm” and “Optional” commitments.

Compensation Requirements

The proposed project will result in 46,439 square feet of direct wetland impacts of which 14,532 square feet is considered wetland of special significance (WSS). Chapter 310 of DEP Regulations outline a minimum ratio of 2:1 (compensation: impacts) for WSS when wetland restoration, enhancement, or creation is proposed as compensation.

Compensation Plan

MaineDOT did not complete a site search for restoration, enhancement, or creation opportunities. MaineDOT was advised by the Corps and DEP that mitigation in the form of a payment to the DEP In-lieu Fee Compensation Program (ILF) would be acceptable. DEP has developed a county-based fee schedule that includes the sum of the cost to restore or create resource area with functions and values similar to those impacted by the proposed project activity and the average land acquisition costs). The formulas used to calculate In-Lieu fee payments are specific to resource type and include multipliers to reflect the significance of the resource.

MaineDOT proposes to make an In-Lieu fee payment of \$205,472.27 to the DEP In-Lieu Fee Compensation Program to satisfy all state and federal mitigation requirements for the Route 27, Augusta project. This fee is based on rates for Kennebec County listed on the current fee schedule (effective 7/1/09 thru 6/30/11) and a resource multiplier of two for impacts to WSS.²²

The estimated advertising and construction schedule for the Augusta project is subject to change depending on the timing of agency approvals, the schedule of other MaineDOT construction projects in the vicinity, seasonal traffic considerations, and funding availability. MaineDOT will notify DEP and the Corps of any

²² Wetland compensation fee = (direct wetland degradation/s.f. x (wetland creation cost/s.f. + assessed land valuation/s.f.)) x (resource multiplier) \$205,472.27 = 46,439(s/f) + 14,532(s/f WSS) = 60,971 square feet x (\$3.37)

changes to the Augusta project schedule that will result in a change to the estimated payment date of the compensation fee.

Topography/Geology – Briefly describe project area topography and geology.

The study area is generally built up with the exception of the block of land between Route 27 and Old Belgrade Road. The topography in the area is gently rolling fields interspersed with steep hill sides. Topography in the study area ranges for 200 to 420 feet above sea level, generally flatter along the roads and rising higher between Route 27 and Old Belgrade Road.

Secondary (Indirect) Impacts/Cumulative Impacts/Others – Discuss any reasonably foreseeable secondary (indirect) and cumulative impacts from the project. Other environmental impacts not covered under previous topics should be included here.

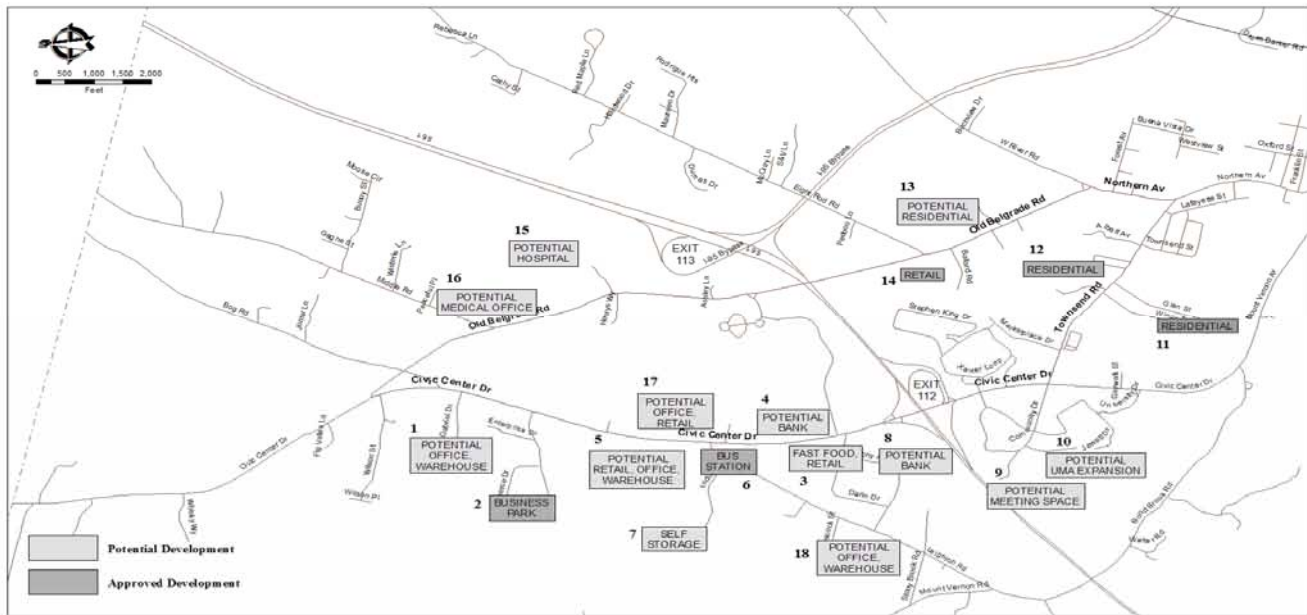
Secondary, also known as Indirect, impacts are defined as reasonably foreseeable consequences to the environment that are caused by a proposed action, but that would occur either in the future (later in time) or in the vicinity of (not at the same location as) the direct impacts (40 CFR Part 1508.8, CEQ Regulations - Effects and impacts as used in these regulations are synonymous.) The baseline for evaluating potential secondary impacts is the existing and reasonably foreseeable expected environment, which is described as the No-Action Alternative. Cumulative impacts are defined as "the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions." (40 CFR Part 1508.7, CEQ Regulations). At the January 20, 2010 MaineDOT Interagency meeting the resource agencies identified secondary (indirect) and cumulative impacts to natural resources are the only areas of concern for the modification of Exit 113 project.

The baseline for cumulative impacts for the Modification of the Exit 113 Interchange and rehabilitation of Old Belgrade Road Checklist EA is 1990. This is the year that the Marketplace at Augusta began construction opening in 1995 for commerce. This commercial area created a change in traffic usage in the Exit 112 and Route 8/27 [aka Civic Center Drive] (Route 27) area. The area analyzed for secondary and cumulative impacts is generally defined as the region around Interstate 95 Exits 113 and 112 and Route 27 between the Augusta Marketplace/Townsend Road access point north to the intersection of Old Belgrade Road/Route 27 then south on to the intersection of Old Belgrade Road/Route 104 (Northern Avenue).

Secondary impacts from the modification of Exit 113 is limited as a substantial part of the analysis area is already developed to its full potential or is subject to construction from the 2.5 million square feet of pending, permitted and/or planned development. The land in the vicinity of I-95 Exit 112 interchange between Route 27/ Old Belgrade Road /Townsend Road is largely fully developed with commercial enterprises such as the Marketplace, the Augusta Civic Center, the University of Maine Augusta campus, and associated smaller developments. There is an approved planned development identified as "Marketplace Phase 3" that would bring to a close the land development within the Marketplace Mall area.

Townsend Road is adjacent to and east of Route 27 is a residential neighborhood that pre-dates the Market Place development.

Route 27 between Exit 112 and the intersection with Old Belgrade Road is a mixed use transition area. Abutting property off Route 27 (Civic Center Drive) is already heavily developed and while some small-scale retail or commercial development may be possible, it is unlikely to result in any more than minimal impact to aquatic resources. Development immediately north of Exit 112 on Civic Center Drive includes a mix of hotels, the Maine Veterans Cemetery, gas station/convenience store, and fast food restaurants. This area includes entrance to the Augusta Business Park and an assortment of small commercial enterprises and service facilities. The east side of Route 27 north of Exit 112 includes a scattering of residential properties that may eventually convert to commercial enterprises. A number of the residential properties have "For Sale – Commercial Property" signs on the lawns. Table 2 identifies reasonably foreseeable planned development's wetland and stream impacts.



Approved and Potential Development, City of Augusta, 2009

Table 2, Pending Planned development

Future Planned affects		wetland	Stream	Notes
Bonefant		0.01		
Maine General Medical Center	new regional hospital on Old Belgrade Road	2.04	200 ft.	estimates
WS Development Associates	Marketplace Phase 3	0.8		11 parcels
MaineDOT	Modification of Exit 113 and Old Belgrade Rd upgrade (aka Preferred Alternative)	1.06		3 residences and 2 vacant land parcels
Total		2.85		

It is expected that all but 0.01 acres of wetland impact will be fully compensated by the proposed developer, although the compensation may not necessarily occur in the Exit 113 study area.

Cumulative impacts typically include the impact of U.S. Army Corps of Engineers (Corps), Maine Department of Environmental Protection, or local (aka City of Augusta) actions (permits) within the affected waterway or nearby aquatic resources. A database search indicates that several permits have been issued for work in the immediate vicinity of the analysis area (Table 3). These include a permit and an amendment for the existing Market Place retail center. The cumulative wetland/waterway impact for all of these projects is 17.24 acres. Five projects, the Augusta Market Place, the Interstate-95 Exit 113, Route 3 Connector and Cushnoc Crossing Bridge, The Tractor Supply store, the Department of Human Services Building, and the Central Maine Commerce Center account for all but about 1 acre and those five projects were fully mitigated. The remaining projects had minimal individual and cumulative impact on aquatic resources and were authorized under Corps Nationwide or State Program General permits.

Table 3, Existing Development

Applicant	Project Name/Description	(acres)	Impact (LF)	Comment
Peter Anastos	Fairfield Inn	0		redevelopment
Gary Hagan	Human Service Building	1.09		
NRF Warehouse	Part of Central Maine Business Park	0.1		
Central Maine Commerce Center	18 Lots and Access drive	2.56		
Northpark Properties	North Park Grill	0		sewer line Permit By Rule stream crossing
Greely Associates	Tractor Supply	1.02		built
Langdon Street Real Estate	Concord Trailways Bus Terminal	0		built
Maine General Medical Center	Alfond Cancer Center	0.33		built
Stone Business Park	Bureau of Motor Vehicle, Wendy's Restaurant	0		previously auto dealership predates state wetland regs
Burton Gay	Dunkin Donuts	0		built
				Wetland impacts noted in license but were non-jurisdictional at the time. Quantities are from Corps permit The principle valuable function identified was groundwater discharge but secondary functions included wildlife habitat, floodflow alteration, sediment/ toxicant retention and nutrient removal.
Northeastern Simon	Marketplace Phase 1	5.17	700 lf	
Wal-Mart	Marketplace Phase 2, see Phase 1	0		built
WS Development Associates	Marketplace, Phase 3 (pending)			11 parcels pending
Augusta Business Park	parking lot on Lot 11A	0.2		
Realty Resources Hospitality	Denny's Restaurant	0.34		impact based on permit code
Advance Auto		0.1		built
	*2 other smaller projects	0.2		
				10.41 acres is the impact for the entire Cushnoc Crossing Bridge and the Route 3 Connector project. MaineDOT had identified the principle valuable functions to be wildlife habitat, floodflow alteration, groundwater discharge, water quality maintenance, and along the water courses, shoreland stabilization and aquatic habitat.
MaineDOT	Cushnoc Crossing Bridge over the Kennebec River to I-95, Exit 113 and the Route 3 Connector	5.9		
MaineDOT	Cushnoc Crossing Bridge from		250	Estimate of impacts to

	Kennebec River to I-95, Exit 113 and the Route 3 Connector			Fisher Brook Watershed
Total		17.24	950 LF	

Table 4	Future Planned affects			
Bonefant		0.01		
Maine General Medical Center	new regional hospital	2.04	200	Pending receipt of Maine Department of Health and Human Services Certificate of Need
WS Development Associates	Marketplace Phase 3	0.8		11 parcels
MaineDOT	Modification of Exit 113 – upgrade of Old Belgrade Rd	3.00	150	estimates
Total		5.85		

Coastal Zone Management Plan- Requires all projects located within the designated coastal zone of a state to be consistent with the state's federally approved CZM plan

Modification of Exit 113 is most likely to be consistent with Maine's Coastal Zone Management Plan.

Clean Water Act Section 401 Certification

MaineDOT has strict construction requirements for maintaining water quality during construction. The modification of Exit 112 construction plans will include specifications and details for methods to protect off site water resources, and comply with Section 401 of the Clean Water Act. The project will obtain Section 401 Water Quality Certification through the Maine Department of Environmental Protection permitting process associated with the Natural Resources Protection Act approval.

Works Cited

- Clement, Jay. "U.S. Army Corps of Engineers, New England Highway Methodology Basic Project Purpose, Augusta, Exit 113." Letter to Judith Lindsey. 24 Mar. 2010. MS. Maine Department of Transportation, Augusta, Maine.
- Clement, Jay, U.S. Army Corps of Engineers. "Preliminary Determination the Corps Highway Methodology Process Is Not Applicable to This Project." Message to Judith Lindsey, Maine Department of Transportation. 04 June 2010. E-mail.
- Gorrill-Palmer Consulting Engineers, Inc. *Draft - Access Justification Report, Exit 113 - Interstate 95, Augusta, Maine*. Rep. Gray, Maine, July 2010. Print.
- Gorrill-Palmer Consulting Engineers, Inc. *Impact of Old Belgrade Road - Civic Center Drive Connector*. Tech. Gray, Maine, August 6, 2008. Print.
- Maine Department of Transportation, Bureau of Transportation Systems Planning. *Highway Traffic Noise Analysis*. Tech. Augusta, Maine, March 1, 2010. Print.
- Maine Department of Transportation, Environmental Office. *Augusta Exit 113 - Route 3 to Route 27 Traffic Study, Natural Resource Existing Condition Technical Memo Report*. Tech. Augusta, Maine, July 2010. Print.
- Tom Crikelair Associates and Richard Tolmach. *Transit Evaluation and Plan for Waterville, Augusta, and Gardiner Final Report*. Tech. Bar Harbor, Maine, October 9, 2009. Print.

Documents Cited or Incorporated by Reference

Note: references are found on the attached CDs

City of Augusta, Maine. Development Services. *Augusta, Maine 2007 Comprehensive Plan*. Comp. Comprehensive Plan Committee. Augusta, Maine, 2007. 2009. Web. 02 Aug. 2010. <http://www.augustamaine.gov/index.asp?Type=B_BASIC&SEC=%7B8A0194BD-A754-462B-8041-B72B8854D7F9%7D>.

Appendix A-1 - Clement, Jay. "U.S. Army Corps of Engineers, New England Highway Methodology Basic Project Purpose, Augusta, Exit 113." Letter to Judith Lindsey. 24 Mar. 2010. MS. Maine Department of Transportation, Augusta, Maine.

Appendix A-2 - Clement, Jay, U.S. Army Corps of Engineers. "Preliminary Determination the Corps New England Highway Methodology Process Is Not Applicable to This Project." Message to Judith Lindsey, Maine Department of Transportation. 04 June 2010. E-mail

Appendix B - Gorrill-Palmer Consulting Engineers, Inc. *Draft - Access Justification Report, Exit 113 - Interstate 95, Augusta, Maine*. Rep. Gray, Maine, July 2010. Print.

Appendix C - Gorrill-Palmer Consulting Engineers, Inc. *Impact of Old Belgrade Road - Civic Center Drive Connector*. Tech. Gray, Maine, August 6, 2008. Print.

Appendix D - Maine Department of Transportation, Bureau of Transportation Systems Planning. *Highway Traffic Noise Analysis*. Tech. Augusta, Maine, December 1, 2010. Print.

Appendix E - Maine Department of Transportation, Environmental Office. *Augusta Exit 113 - Route 3 to Route 27 Traffic Study, Natural Resource Existing Condition Technical Memo Report*. Tech. Augusta, Maine, July 2010. Print.

Appendix F - Tom Crikelair Associates, and Richard Tolmach. *Transit Evaluation and Plan for Waterville, Augusta, and Gardiner Final Report*. Tech. Bar Harbor, Maine, October 9, 2009. Print.

Appendix G - Granger, Greg. "Augusta, Exit 113 Farmland Conversion Impact Rating." Letter to Richard Bostwick. 06 Sept. 2010. Maine Department of Transportation, Augusta, Maine.

Appendix H – Nazar, Matthew. "Exit 112/113 Land Use, Zoning, Community Characteristics and Community Cohesion." Message to Judith Lindsey, Maine Department of Transportation. 25 Nov. 2009. E-mail.

Appendix J - Maine Department of Transportation. Bureau of Transportation Systems Planning. *17592.00 Augusta – Exit 113 Triangle Area Traffic Analysis*. By Dennis Emidy. Augusta, Maine, 21 Dec. 2010. Print.

Appendix K – Maine Department of Transportation. *17592.00 Augusta – Exit 113 Natural Resource Cumulative Assessment*. Augusta, Maine, 2010. Print.

Appendix L – Nazar, Matthew, City of Augusta, Maine. "Land use, Zoning and Community Characteristics ." Message to Judy Lindsey, Maine Department of Transportation. December 15, 2009. E-mail.

Appendix M - Ourston Roundabout Engineering. *Roundabout Operational Analysis and Design Services, Proposed Roundabout at Civic Center Drive/Old Belgrade Rd/Bog Rd. Augusta, Maine*. Tech. Vol. 09909. Madison, Wisconsin, July 16, 2010. Print

Appendix M1 - Ourston Roundabout Engineering. *Roundabout Analysis and Design Services Augusta, I-95, Exits 112 & 113, Augusta, Maine*. Working paper. Madison, Wisconsin, July 7, 2009. Print.

Appendix N – Redmond, Susan, City of Augusta. "Exit 112 and 113 Environmental Assessment Task 3.3.8 Public Parks and Recreation Lands." Message to Judy Lindsey, Maine Department of Transportation. 1 Oct. 2009. E-mail.

Appendix N1- Redmond, Susan, City of Augusta. "Augusta, Exit 112 and 113 Public Parks and Recreation Lands Location Map." Message to Judy Lindsey, Maine Department of Transportation. 16 Oct. 2009. E-mail.

Appendix P - Avore, Scott, Chief Property Officer. *Augusta - Exit 113 / Old Belgrade Road Preliminary R/W Cost Estimates*. Tech. Augusta, Maine, July 21, 2010. Print.